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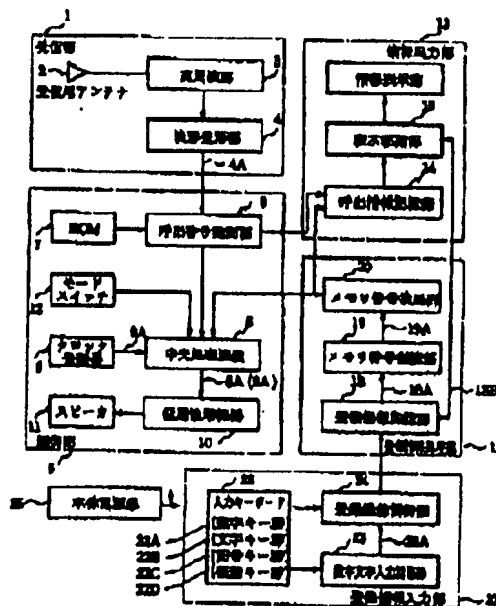
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(54) 【発明の名称】 メッセージ表示付きページャ

(57) 【要約】

【構成】メッセージを受信しそのメッセージを表示部に表示するページング受信表示機能を有するメッセージ表示付きページャにおいて、ページャ携帯者が付属するキースイッチ群を操作することにより、名前、電話番号、合言葉等を登録情報番号を付与して登録しておくことが可能であり、かつ、それらを随時読み出し検索並びに書き替えることができる。

【効果】メッセージを受信しかつ表示するメッセージ表示型ページャにおいて、名前、電話番号、合言葉等ページャ携帯者が登録しておきたい登録情報を入力並びに記憶できるようになっており、さらに入力済の登録情報を収納している番地に対応するメモリ番号が割り当てられているので、メモリ番号に一致する数字列情報を受信するだけで該当する登録情報が検出され、かつ出力表示される。





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形部4を通過することにより、個別呼出番号と呼出情報とを含む出力番号4Aが、次段の制御部5にある呼出番号識別部6へ転送される。出力番号4Aの個別呼出番号は、ROM7の内部に記憶されているページ自体の個別呼出番号（すなわち記憶番号）と比較され、記憶番号と一致した場合に接続する呼出情報が情報出力部13の呼出情報記憶部14に記憶される。それと同時に、中央処理装置8から出力指令信号8Aが出力される。この出力指令信号8Aは、クロック発生部9で発生した信号9Aと共に記憶増幅器部10へ送られ、これによってアラート音がスピーカ11より出力される。なお、アラート音の鳴音を停止する場合には、モードスイッチ12をリセットすることにより停止することができる。このアラート音に続き、数字や文字の組み合わせあるいは数字列で構成されるメッセージとしての呼出情報が呼出情報記憶部14から読み取動部15を通過して出力され、情報表示部16に表示され、一定時間経過後に次画面表示へ移り、最終画面まで同様に繰り返す。その後、画面表示は自動的に消去される。

【0011】次に、ページ携帯者が登録済であるところの名前、電話番号、合言葉等の登録情報を、前記呼出情報の中で特に定められた数字列で構成されるメッセージと対比させて表示させる場合について説明する。登録情報は、登録情報記憶部17にある登録情報記憶部18に各情報ごとに個別収納されており、その収納番地を意味するアドレス番号18Aは、メモリ番号記憶部19に収納されている。前述の個別呼出番号に接続する呼出情報が呼出情報記憶部14に記憶されるときに、この呼出情報がメモリ番号に相当する数字列のみで構成されている場合には、メモリ番号抽出部20でその数字列内容とメモリ番号記憶部19から選出されるメモリ番号信号19Aと比較される。このとき数字列とメモリ番号が一致する場合には、該当する登録情報を登録情報記憶部18から読み出し、番号18Bとして表示露動部15を通過して出力され情報表示部16に表示される。一定時間経過後に次画面表示へ移り最終画面まで同様に繰り返した後画面表示は自動的に消去される。

【0012】なお、数字列と一致するところのメモリ番号に該当する番地に登録情報が入力されていない場合、ならびに数字列と一致するメモリ番号自体が無い場合には、その数字列自体を呼出情報としてその次画面表示部16に表示させることができる。

【0013】一方、登録情報に関する入力、出力表示、記憶、消去、検索等の各操作は登録情報入力部21にある入力キーボード22を通じて実行する。なお、入力キーボード22は4つのキー群より構成される。数字キー群22Aを用いて前記メモリ番号を入力設定し、電話番号などの数字を入力する。又名前や合言葉は、さらに文字キー群22B及び記号キー群22Cを用いメッセージ入力を行なう。入力確認・訂正・記憶・消去、読み出し

検索（頒出し、使用頻度順、アルファベット順、カナ順等による検索）、時区番号付き検索などの各種処理を実行するには、機能キー群22Dの中に該当するキースイッチを使用する。これらの各種処理は前記呼出情報の有無とは独立に操作し実行することができる。入力キーボード22の中の数字キー群22A、文字キー群22B、及び記号キー群22Cを操作することにより、数字文字入力回路部23で信号23Aが生成され、機能キー群22Dの操作によって働く登録情報制御部24を経由後に、前述の如く登録情報は登録情報記憶部18に、収納番地はメモリ番号記憶部19に収納されることにより登録が完了する。

【0014】本体電線部25は受信部1、制御部5、情報出力部13、登録情報記憶部17、並びに登録情報入力部21の各々へ電線を供給している。

【0015】

【発明の効果】以上説明したように本発明は、メッセージを受信しかつ表示するメッセージ表示型ページにおいて、名前、電話番号、合言葉等ページ携帯者が登録しておきたい登録情報を入力並びに記憶できるようになっており、さらに入力済の登録情報を収納している番地に対応するメモリ番号が割り当てられているので、メモリ番号に一致する数字列情報を受信するだけで該当する登録情報が検出され、かつ出力表示されるという効果を有する。すなわち、呼出者が従来どおり数字のみを入力するにもかかわらず、従来の数字暗号文が出力表示される代りに、該当する呼出者の名前や電話番号、さらには合言葉による用件が数字や文字によって構成されるメッセージによって出力表示されるので、ページ携帯者にとって直観、理解可能という効果を有している。

【0016】又メッセージ受信によるページング機能とは独立に、ページ携帯者にとっては電話番号等を随時入力、記憶、検索、表示をすることが可能であるという効果も有している。また、呼出者にとって入力が簡単であり、又オペレータにとっては数字列のみを送ることによりページング伝送時間を短縮できるので、電波の使用効率を上げるという効果を有する。

【図面の簡単な説明】

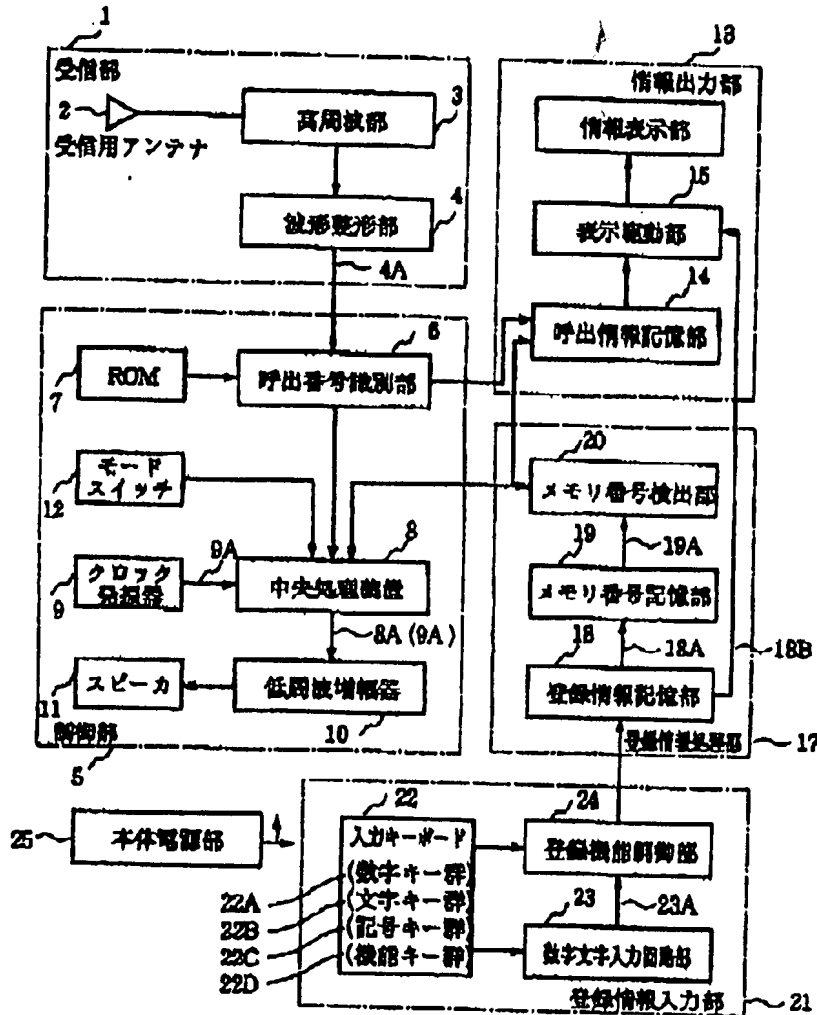
【図1】本発明の一実施例のメッセージ表示付きページのブロック図である。

【符号の説明】

- 1 受信部
- 2 受信用アンテナ
- 3 高周波部
- 4 波形整形部
- 5 制御部
- 6 呼出番号識別部
- 7 ROM
- 8 中央処理装置
- 9 クロック発生部

- (4)
- 特開平4-293324
- 10 低周波増幅器
- 11 スピーカ
- 12 モードスイッチ
- 13 情報出力部
- 14 呼出情報記憶部
- 15 表示駆動部
- 16 情報表示部
- 17 登録情報記憶部
- 18 登録情報記憶部
- 19 メモリ番号記憶部
- 20 メモリ番号検出部
- 21 登録情報入力部
- 22 入力キーボード
- 23 数字文字入力回路部
- 24 登録機能制御部
- 25 本体電源部

【図1】



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(54) Name of Invention: Pager with Message Display

(57) Summary of Invention

Structure: A pager with message display which has the function to display pages received as well as to display in the display section messages received. The user of the pager with message display can manipulate a key switch group inherent to the pager that will display and register the name, phone number and password with a registration information number assigned by the user. The device can also search for, bring up and make changes to the information when the user desires.

Function: The user of this pager with message display which receives and displays messages is able to input and store desired registration information such as name, phone number and a password. Further, the registration information thus entered is stored in the system memory and assigned a memory number. When a message is received, the numerical information is matched with a corresponding memory storage location and corresponding registration information is displayed along with the message received.

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[See last page for drawing descriptions]

**Claims:**

**What is claimed is:**

**Claim 1:** A pager with message display which has the function to display pages received as well as to display in the display section messages received. The user of the pager with message display can manipulate a key switch group inherent into the pager that will display and register the name, phone number and password with a registration information number assigned by the user. The device can also search for, bring up and make changes to the information when the user desires.

**Claim 2:** A pager with message display which has the function to display pages received as well as to display in the display section messages received. The user of the pager with message display can manipulate a key switch group inherent into the pager that will display and register the name, phone number and password with a registration information number assigned by the user. The device can also search for, bring up and make changes to the information when the user desires. The pager with message display device described in Claim 1 can also store such registration information in a structural format so that when a message is received, corresponding registration information is automatically retrieved from system memory and displayed.

**Detailed Description of the Invention**

**0001**

**Field of the Invention:** This invention is related to pagers with message displays but in particular when the pager sends a page, the pager with message display searches its system memory and displays previously entered registration information if such information has been previously entered.

**0002**

**Description of Prior Art:** Personal paging services in which a person can communicate with or send information to the user through wireless frequencies while he or she is out of the office or on a sales call are well known. Pagers with message display that are able to display information in numbers or text are beginning to see more widespread use.

**0003**

Originally there were three types of pagers with message display. The first type is a numeric display type pager. This type functions by the caller physically inputting the intended call-back number into the phone keypad. This input number then appears on the pager display window. The second type is an alpha-numeric display or kana display type pager. This type functions by the caller speaking to an operator and conveying the message to the operator. The operator then sends the message, either text or numbers or both, to the pager and it is thus displayed in the pager display window. The third type is called a fixed message display type pager. This type functions by the caller, using a

combination of the pound (#) key and asterisk (\*) key and numeric keys, inputting a pass code and then being able to send messages to the user of the pager. With this type, the user is unable to manipulate the message in any way. It is displayed on the pager display window exactly as input by the caller. These three types of pagers are referred to as numeric display pagers, alpha-numeric display pagers, and fixed message display pagers.

0004

Issues the Invention Seeks to Resolve: Of the prior pager types outlined above, the numeric display pager required the caller to input either their desired callback phone number, or a message composed of numerals. If the user of the pager does not have a pre-arranged code worked out with the caller and does not understand the meaning of the numeric message, he or she would have to carry a code list to have the numeric coded message mean something. This is one of the drawbacks to this type of pager.

0005

With the alpha-numeric display pager, the received message is displayed in letters [Katakana characters] and numerals and thus can be directly read and easily understood by the user of the pager. However, the caller must employ a complicated system using the pushbutton keys on the phone including the pound sign (#) and the asterisk (\*) as well as number keys in order to input the intended message, has to connect using a computer and input the message in this way, or call an operator and ask the operator to input the message into the system for sending, thus making this alpha-numeric display pager difficult to use for the caller or person sending the message to be displayed. These are some of the drawbacks to this type of pager.

0006

With the fixed message display pager, the received message is displayed in letters [Katakana characters] and numerals and thus can be directly read and easily understood by the user of the pager. However once again the caller must employ a complicated system using the pushbutton keys on the phone including the pound sign (#) and the asterisk (\*) as well as number keys, along with a pass code in order to send predetermined fixed messages. It is difficult to use for the caller, and only preset messages can be sent. These are some of the drawbacks to this type of pager.

0007

The purpose of the current invention is to allow the caller to directly input numeric messages using pushbutton phones, as well as to allow the user of the pager to enter pertinent information about the caller and have this registered information displayed upon receipt of a message from that caller. The purpose of this invention is to have numeric information sent by the caller be received by the user of the pager in an easy to read and understandable fashion.

0008

Measures Implemented to Resolve Above Issues: A pager with message display which has the function to display pages received as well as to display in the display section messages received. The user of the pager with message display can manipulate a key switch group inherent into the pager that will display and register the name, phone number and password with a registration information number assigned by the user. The device can also search for, bring up and make changes to the information when the user desires.

0009

Preferred Embodiments: The following makes reference to the drawings to explain preferred embodiments.

0010

Drawing 1 is a block diagram of one preferred embodiment for this invention. In this embodiment, a signal is received by Reception Antenna 2 built into Reception Section 1. When the signal passes through High Frequency Section 3 and Frequency Modulator 4, Output Number 4A including the individual caller number and caller information is transmitted to the Caller Number Identification Section 6 inside Control Section 5. The individual caller number from Output Number 4A is compared to a list of recognized numbers stored in the memory inside the pager's ROM 7, and if there is a match, the caller information is stored in the Caller Information Storage Section 14 of the Information Output Section 13. An Output Command Signal 8A is simultaneously released by Central Processing Unit 8. This Output Command Signal 8A is sent together with Signal 9A generated by Block Vibration Section 9 to Low Frequency Amplifier 10 and causes an alert sound to sound from Speaker 11. If the user wishes to turn off the alert sound, he or she can do so by resetting Mode Switch 12. Following this alert sound, the message comprised of numbers, text [Katakana characters] or a combination of both representing the caller information is output from Caller Information Storage Section 14, passes through Display Driver Section 15 and is displayed on Information Display Section 16. Following this progression, the pager moves to the next screen and proceeds to flash back and forth to the last screen. After this, the screen display automatically shuts down.

0011

Next of all the cases outlined above where the user of the pager has previously input registration information about a specific caller such as the caller's name, phone number or a pass code, the specific case of when the caller inputs his or her message as a predetermined series of numbers will be explained. The registration information is individually received into Registration Information Storage Section 18 of the Registration Information Processing Section 17. Address Signal 18A, which refers to the individual storage location, is received into Memory Number Storage Section 19. When the caller information following the aforementioned individual caller number is stored in Caller Information Storage Section 14, and the caller information is comprised only of a series of



numbers corresponding to its memory location number, the series of numbers is compared to the Memory Number Signal 19A sent from Memory Number Search Section 20 and Memory Number Storage Section 19. If the series of numbers and the memory number match, the corresponding registration information is read from Registration Information Storage Section 18, Signal 18B passes through Display Driver Section 15, and is output and displayed on Information Display Section 16. Following this progression, the pager moves to the next screen and proceeds to flash back and forth to the last screen. After this, the screen display automatically shuts down.

#### 0012

If there is no registration information in a memory location corresponding to a memory location number which matches the series of numbers that has been previously input by the user of the pager, or if there is no memory number itself matching the series of numbers input by the caller, the series of numbers itself is displayed as is on Information Display Section 16 as the caller information.

#### 0013

All functions regarding the registration of caller information such as input, output display, storage, deletion and search are accomplished through Input Keyboard 22 in the Registration Information Input Section 21. Input Keyboard 22 is comprised of four clusters of keys. The Numeric Key Cluster 22A is used to input and assign the aforementioned memory numbers, as well as input other numeric information such as phone numbers. Name and pass codes are input using the Text [Katakana Characters] Key Cluster 22B and Symbol Key Cluster 22C, as well as message text. The corresponding key switch in Function Key Cluster 22D is used to perform various functions including: Confirm Entry, Revise Entry, Save, Delete, Search (First Letter Search, List in Order of Frequency of Use, Alphabetical Order, Katakana Character Order) or Search Using Pass Codes. These functions can be used independently of the existence of previously input caller information. When Numeric Key Cluster 22A, Text [Katakana Characters] Key Cluster 22B or Symbol Key Cluster 22C of Input Keyboard 22 is used, Signal 23A is generated by Alpha-Numeric Input Circuit Section 23. After passing through Registration Function Control Section 24, which works in accordance with commands input to Function Key Cluster 22D, the aforementioned registration information is stored in Registration Information Storage Section 18, a memory location is allocated by Memory Number Storage Section 19, and the registration is complete.

#### 0014

Unit Power Section 25 provides power to Reception Section 1, Control Section 5, Information Output Section 13, Registration Information Processing Section 17 and Registration Information Input Section 21.

#### 0015

**Function of the Invention:** As explained above, the user of this pager with message display which receives and displays messages is able to input and store desired registration information such as name, phone number and a password. Further, the registration information thus entered is stored in the system memory and assigned a memory number. When a message is received, the numerical information is matched with a corresponding memory storage location and corresponding registration information is displayed along with the message received. In addition, although the caller inputs a numeric message as in previously available types of pagers, instead of having this numeric message be displayed on the pager display window as a numeric code, the present invention displays the message as the corresponding caller's name and phone number, or if a previously agreed pass code is entered by the caller, the message is displayed as an alpha-numeric message on the pager's display window. This function is easy to read and understand by the user of the pager.

0016

Further, aside from its function as a pager with message display, the present invention also has a function which allows the user to input, store, search and display information about various callers. The inputting of messages by the caller is easier, and the sending of prearranged series of numbers by the operator means the operator's time with each call is reduced, and the overall usage of wireless frequencies is reduced.

#### **Brief Description of the Drawings**

**Drawing 1:** Drawing 1 is a block diagram of one preferred embodiment for this invention.

#### **Drawing Legend:**

- 1 Reception Section
- 2 Reception Antenna
- 3 High Frequency Section
- 4 Frequency Modulator
- 5 Control Section
- 6 Caller Number Identification Section
- 7 ROM
- 8 Central Processing Unit
- 9 Block Vibration Section
- 10 Low Frequency Amplifier
- 11 Speaker
- 12 Mode Switch
- 13 Information Output Section
- 14 Caller Information Storage Section
- 15 Display Driver Section
- 16 Information Display Section
- 17 Registration Information Processing Section
- 18 Registration Information Storage Section

- 19 Memory Number Storage Section
- 20 Memory Number Search Section
- 21 Registration Information Input Section
- 22 Input Keyboard
- 23 Alpha-Numeric Input Circuit Section
- 24 Registration Function Control Section
- 25 Unit Power Section

- [22A Numeric Key Cluster]
- [22B Text [Katakana Characters] Key Cluster]
- [22C Symbol Key Cluster]
- [22D Function Key Cluster]

Fig. 1

